

Claims:

1. A method of deflashing IC packages comprising the steps of:
 - 5 directing a first laser beam in the infra-red frequency range onto flash area for removing top layer of flash; and subsequently
 - directing a second pulsed laser beam onto the flash area at low laser fluence and pulse number for removing the thin layer of flash remained after application of the first laser beam.
- 10 2. A method according to claim 1, wherein the first laser is a CO₂ laser.
3. A method according to claim 1 or claim 2 in which the first laser beam has a wavelength of approximately 1064 nm.
4. A method according to any preceding claim in which the first laser is operated in pulses of length in excess of 1 μ s.
- 15 5. A method according to claim 4 in which the first laser is operated in continuous wave mode.
6. A method according to any preceding claim in which the first laser has an intensity of approximately 10kw/cm².
7. A method according to any preceding claim in which the second laser is a YAG laser.
- 20 8. A method according to claim 7 in which the second laser has a wavelength that is between ultra-violet and infra-red.
9. A method according to claim 8 in which the second laser has a wavelength of approximately 532 nm or 1064nm.

206270-0165001

10. A method according to any preceding claim in which the second laser is operated in pulses.

11. A method according to claim 10 in which the pulse duration is between one fs and 1000 ns.

5 12. A method according to claim 11 in which the pulses are of duration not greater than 100ns.

13. A method according to any preceding claim in which the second laser has a fluence of less than 1000 mJ/cm².

10 14. A method according to claim 13 in which the second laser has a fluence of approximately 300 mJ/cm².

15. An apparatus for deflashing IC packages comprising:

- a. a conveyor system for carrying IC packages to appropriate position;
- b. a mask placed on IC packages for exposing flash area to laser beams;
- c. first and second lasers for generating laser beams; and
- 15 d. a scanning system for each laser;

wherein the conveyor is movable relative to each laser beam, the two galvanometers being used to scan respective laser beams in turn on a flash area of the IC packages.

20 16. Apparatus according to claim 15 further comprising an exhauster for removing flash debris.

17. Apparatus according to claim 15 or claim 16 in which the first laser is a CO₂ laser.

18. Apparatus according to any one of claims 15 to 17 in which the first laser is a pulsed laser.

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19. Apparatus according to any one of claims 15 to 17 in which the first laser is a continuous wave laser.
20. Apparatus according to any one of claims 15 to 19 in which the second laser is a YAG laser.
- 5 21. Apparatus according to any one of claims 15 to 20 in which the second laser has a wavelength of 1064 nm or 532 nm.
22. Apparatus according to any one of claims 15 to 21 in which the second laser has predetermined pulse-duration.
- 10 23. Apparatus according to claim 22 in which the predetermined pulse duration is between 1 fs and 1000 ns.
24. A method of deflashing integrated circuit packages substantially as herein described with reference to the accompanying drawings.
25. An apparatus for deflashing IC packages substantially as herein described with reference to the accompanying drawings.

2006270-0465001